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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
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10/665,687

09/17/2003

David M. Skinlo

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EXAMINER

HODGE, ROBERT W

ART UNIT

PAPER NUMBER

1729

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DELIVERY MODE

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PAPER

Please find below and/or attached an Office communication concerning this application or proceeding.

The time period for reply, if any, is set in the attached communication.

Office Action Summary	Application No. 10/665,687	Applicant(s) SKINLO, DAVID M.	
	Examiner ROBERT HODGE	Art Unit 1729	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 22 February 2011.
- 2a) ☒ This action is **FINAL**. 2b) ☐ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 43-45 and 67-90 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 43-45, 67-71, 73-75 and 77-90 is/are rejected.
- 7) ☒ Claim(s) 72 and 76 is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on _____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
 2. ☐ Certified copies of the priority documents have been received in Application No. _____.
 3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- | | |
|--|---|
| 1) <input type="checkbox"/> Notice of References Cited (PTO-892) | 4) <input type="checkbox"/> Interview Summary (PTO-413) |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948) | Paper No(s)/Mail Date. _____ |
| 3) <input type="checkbox"/> Information Disclosure Statement(s) (PTO/SB/08) | 5) <input type="checkbox"/> Notice of Informal Patent Application |
| Paper No(s)/Mail Date _____ | 6) <input type="checkbox"/> Other: _____ |

DETAILED ACTION

Response to Arguments

Appellants' arguments filed 2/22/11 have been fully considered but they are not persuasive. Appellants provide contradictory remarks in their appeal brief filed 2/22/11. Appellants first argue that the instantly claimed invention "can improve the quality of the result" "during the filling process" (page 8 of appellants' brief). Then on page 16 of appellants' brief appellants state that "claim 43 is directed to a sealed battery". Filling a battery is a process step that is performed before the battery is sealed, once the battery is sealed it is considered a final product. Claim 43 is a product claim directed to a final product of a sealed battery as admitted to by appellants therefore it is unclear how a process step of filling a battery before it is sealed is relevant to the instant claims. Appellants also point to various portions of their specification describing the process of filling the battery before sealing the battery (page 13 of appellants' brief) and state that the instantly claimed invention has unexpected results and they are not just rearranging parts of a conventional battery. Again the instant claims are drawn to a final product as admitted to by appellants and therefore the process of filling the battery is not germane to the instant claims. In order for appellants to show unexpected results with regards to the relocation of parts within a conventional battery appellants must show that the relocation of the parts affects the overall operation of the battery. To date appellants have failed to provide such evidence, and instead have chosen to argue the supposed unexpected results. Appellants are again invited to provide the Examiner with evidence showing that the location of how the tab is connected to the cap of the instantly claimed

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final product has unexpected results with regards to the operation of the battery. In the absence of said evidence it is submitted that the battery will operate the same regardless of the location of how the electrically conductive tab is attached to the electrically conductive cap plate of the battery. Therefore it is submitted that the prior art as combined will operate the same regardless of the location of the electrically conductive tab being connected to the electrically conductive terminal and/or cap plate and the burden is shifted to appellants to prove in the form of evidence a non-obvious difference.

Election/Restrictions

Based on the petition decision filed 10/15/10 the election by original presentation of claim 90 is withdrawn herewith and claim 90 is no longer considered withdrawn from consideration.

Claim Rejections - 35 USC § 112

The following is a quotation of the first paragraph of 35 U.S.C. 112:

The specification shall contain a written description of the invention, and of the manner and process of making and using it, in such full, clear, concise, and exact terms as to enable any person skilled in the art to which it pertains, or with which it is most nearly connected, to make and use the same and shall set forth the best mode contemplated by the inventor of carrying out his invention.

Claim 89 is rejected under 35 U.S.C. 112, first paragraph, as failing to comply with the written description requirement. The claim(s) contains subject matter which was not described in the specification in such a way as to reasonably convey to one skilled in the relevant art that the inventor(s), at the time the application was filed, had

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possession of the claimed invention. No support can be found for the negative limitation of “wherein the tab is the **only** tab providing electrical communication between the second end cap and the electrode that is electrically insulated from the pin” as recited in claim 89. Applicants also do not provide any guidance as to where support can be found for the limitation of this newly added claim or any other newly added claim. Looking at figures 21-24 it appears that the case which is adjacent the electrode assembly and is also conductive (as per the claims and instant specification) will also provide electrical communication to the end cap in question and therefore it is not only the tab providing the electrical communication.

The following is a quotation of the fourth paragraph of 35 U.S.C. 112:

Subject to the following paragraph, a claim in dependent form shall contain a reference to a claim previously set forth and then specify a further limitation of the subject matter claimed. A claim in dependent form shall be construed to incorporate by reference all the limitations of the claim to which it refers.

Claim 90 is rejected under 35 U.S.C. 112, fourth paragraph, as being of improper dependent form for failing to further limit the subject matter of a previous claim. Applicant is required to cancel the claim(s), or amend the claim(s) to place the claim(s) in proper dependent form. Claim 90 recites process steps of how the end cap can be removed from the case and how it can be positioned with respect to the case upon removal but does not provide any additional structure to further limit the structure of claim 68.

Claim Rejections - 35 USC § 103

The text of those sections of Title 35, U.S. Code not included in this action can be found in a prior Office action.

Claims 43-45, 67, 83 and 85-88 are rejected under 35 U.S.C. 103(a) as being unpatentable over U.S. Patent No. 6,399,242 hereinafter Kitoh in view of U.S. Patent No. 3,159,508 hereinafter Chreitzberg.

Kitoh teaches a lithium battery comprising a battery case 11, a first battery lid (16), a second battery lid (17), an electrically conductive terminal pin 15 extending through the first end cap and electrically insulated from the case by sealing member 18, an electrode assembly disposed within the case with at least one electrode in electrical communication with the pin and the opposite electrode insulated from the same pin via a separator, wherein flexible conductive tabs 5 are disposed past a center point of the second battery lid and are electrically connected to the second battery lid. Kitoh further teaches that the tab is not attached to the second battery lid continuously over a distance extending from the first location to the second location. Kitoh also teaches that the case excludes a fill hole, the tabs are welded to the terminal pin and/or cap, the end cap can be made of an electrical insulative material that the pin extends through and the case is electrically conducting (figures and column 2, line 52 – column 5, line 43).

Kitoh does not teach that the conductive tab is electrically connected to the second battery lid such that the tab is immobilized only at the second location.

As seen in figure 1, Chreitzberg teaches a battery wherein the tab 8 (on the right hand side of the figure) connects to the negative electrode 3 (also on the right hand side

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of the figure) and extends to the negative terminal 7 (i.e. extends a crossed the whole interior not immobilized) and is attached to the terminal in the cap only at the terminal (i.e. is only immobilized at the terminal in the cap), see also column 2, line 44 et seq.

At the time of the invention it would have been obvious to one having ordinary skill in the art to attach the flexible conductive tabs of Kitoh only at a second location past the center point from the first location of the cap as taught by Chreitzberg in order to reduce internal resistance and facilitate current extraction from the electrode and also since it has been held that the rearrangement of parts is within a skilled artisans level of skill in the art. In re Japikse, 181 F.2d 1019, 86 USPQ 70 (CCPA 1950).

With respect to claims 67 and 87 Chreitzberg teaches that the distance from the first location to the second location is greater than the radius of the cap and the tab extends past the center point of the cap. See Figure 1.

Claim 84 is rejected under 35 U.S.C. 103(a) as being unpatentable over Kitoh in view of Chreitzberg as applied to claim 43 above, and further in view of U.S. Patent No. 5,755,759 hereinafter Cogan.

Kitoh as modified by Chreitzberg does not teach the use of PtIr alloy as the pin.

Cogan teaches a biomedical device wherein the wire electrode is made of PtIr alloy because it can record or stimulate physiological function. See Column 3, Lines 43-56.

At the time of the invention it would have been obvious to having ordinary skill in the art to use PtIr alloy as the pin for the battery of Kitoh as modified by Chreitzberg, in order to provide an electrode pin that has reduced electrical resistance thereby

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improving the overall performance of the battery. If a technique has been used to improve one device (an electrode made of PtIr), and a person of ordinary skill in the art would recognize that it would improve similar devices in the same way, using the technique is obvious unless its actual application is beyond his or her skill. See MPEP 2141 (III) Rationale C, KSR v. Teleflex (Supreme Court 2007).

Claims 43-45, 67, 83 and 85-89 are rejected under 35 U.S.C. 103(a) as being unpatentable over U.S. Patent No. 6,399,242 hereinafter Kitoh in view of U.S. Patent No. 5,912,089 hereinafter Kitano.

Kitoh does not teach that the conductive tab is electrically connected to the second battery lid such that the tab is immobilized only at the second location. With regards to claim 89 Kitoh does not teach the use of a single tab.

As seen in figures 2 and 3, Kitano teaches a battery wherein a perforated current collector 4 is attached to the electrode assembly with a single tab 6 extending from said current collector at an area adjacent to the case to a second location A and is attached to the cap only at location A (i.e. immobilized at location A) and is not immobilized over the entire distance from the first location to the second location (column 3, lines 30-40).

At the time of the invention it would have been obvious to one having ordinary skill in the art to attach the flexible conductive tabs of Kitoh only at a second location past the center point from the first location of the cap as taught by Kitano in order to reduce internal resistance and facilitate current extraction from the electrode and also since it has been held that the rearrangement of parts is within a skilled artisans level of skill in the art. In re Japikse, 181 F.2d 1019, 86 USPQ 70 (CCPA 1950). With regards

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to claim 89 it further would have been obvious to use only one combined current collector and tab in Kitoh as taught by Kitano to further reduce internal resistance and facilitate current extraction from the electrode and also since it has been held that forming in one piece an article which has formerly been formed in multiple pieces and put together involves only routine skill in the art. *Howard v. Detroit Stove Works*, 150 U.S. 164 (1893). The claimed subject matter merely combines familiar elements (a single tab connected to an end cap) according to known methods and does no more than yield predictable results. See MPEP 2141 (III) Rationale A, *KSR v. Teleflex* (Supreme Court 2007).

With respect to claims 67 and 87 Kitano teaches that the distance from the first location to the second location is greater than the radius of the cap and the tab extends past the center point of the cap. See Figure 1.

Claim 84 is rejected under 35 U.S.C. 103(a) as being unpatentable over Kitoh in view of Kitano as applied to claim 43 above, and further in view of U.S. Patent No. 5,755,759 hereinafter Cogan.

Kitoh as modified by Kitano does not teach the use of PtIr alloy as the pin.

Cogan as discussed above is incorporated herein.

At the time of the invention it would have been obvious to having ordinary skill in the art to use PtIr alloy as the pin for the battery of Kitoh as modified by Kitano, in order to provide an electrode pin that has reduced electrical resistance thereby improving the overall performance of the battery. If a technique has been used to improve one device (an electrode made of PtIr), and a person of ordinary skill in the art would recognize that

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it would improve similar devices in the same way, using the technique is obvious unless its actual application is beyond his or her skill. See MPEP 2141 (III) Rationale C, KSR v. Teleflex (Supreme Court 2007).

Claims 68-71, 73-75, 77-82 and 90 are rejected under 35 U.S.C. 103(a) as being unpatentable over Kitoh in view of Chreitzberg as applied to claim 43 above, and further in view of U.S. Patent No. 4,053,687 hereinafter Coibion.

Kitoh as modified by Chreitzberg does not teach that the electrodes and separators are wound around the pin to form a spiral role on the pin.

Coibion teaches an electrochemical cell wherein a combined cylindrical (i.e. tube shaped) mandrel/pin (that reinforces the electrode assembly) is used to hold an uncoated region of the electrode in a longitudinal slot during winding such that only one electrode is present in the slot and the electrode can be welded in the slot of the mandrel/pin (figures 5-9 and Column 4, line 62—Column 6, line 3).

At the time of the invention it would have been obvious to one having ordinary skill in the art to include a combined mandrel/pin in Kitoh as modified by Chreitzberg as taught by Coibion in order to properly immobilize the electrode assembly thereby preventing damage to the electrodes which could cause short circuiting when the battery is exposed to large mechanical forces or prolonged vibration.

With regards to claim 70, Kitoh as modified by Chreitzberg and Coibion teaches the claimed invention except for having a separate mandrel and pin. It would have been obvious to one having ordinary skill in the art at the time the invention was made to provide a separate mandrel and pin, since it has been held that constructing a formerly

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integral structure in various elements involves only routine skill in the art. MPEP

2144.04 V (C).

With regards to claim 80, Kitoh as modified by Chreitzberg and Coibion teaches the claimed invention except for the cross-sectional shape of the mandrel. It would have been obvious to one having ordinary skill in the art at the time the invention was made to change the shape of the mandrel, since it has been held that a change in shape is generally recognized as being within the level of ordinary skill in the art. MPEP 2144.04 IV (B).

With regards to claim 90, the recitations in claim 90 are directed to the process of removing the end cap from an already sealed battery as recited in the claims from which claim 90 depends and therefore claim 90 does not further limit the structure of the claims from which it depends. Therefore Kitoh as modified by Chreitzberg and Coibion reads on claim 90 as recited.

Claims 68-71, 73-75, 77-82 and 90 are rejected under 35 U.S.C. 103(a) as being unpatentable over Kitoh in view of Kitano as applied to claim 43 above, and further in view of U.S. Patent No. 4,053,687 hereinafter Coibion.

Kitoh as modified by Kitano does not teach that the electrodes and separators are wound around the pin to form a spiral role on the pin.

Coibion teaches an electrochemical cell wherein a combined cylindrical (i.e. tube shaped) mandrel/pin (that reinforces the electrode assembly) is used to hold an uncoated region of the electrode in a longitudinal slot during winding such that only one

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electrode is present in the slot, the electrode can be welded in the slot of the mandrel/pin (figures 5-9 and Column 4, line 62—Column 6, line 3).

At the time of the invention it would have been obvious to one having ordinary skill in the art to include a combined mandrel/pin in Kitoh as modified by Kitano as taught by Coibion in order to properly immobilize the electrode assembly thereby preventing damage to the electrodes which could cause short circuiting when the battery is exposed to large mechanical forces or prolonged vibration.

With regards to claim 70, Kitoh as modified by Kitano and Coibion teaches the claimed invention except for having a separate mandrel and pin. It would have been obvious to one having ordinary skill in the art at the time the invention was made to provide a separate mandrel and pin, since it has been held that constructing a formerly integral structure in various elements involves only routine skill in the art. MPEP 2144.04 V (C).

With regards to claim 80, Kitoh as modified by Kitano and Coibion teaches the claimed invention except for the cross-sectional shape of the mandrel. It would have been obvious to one having ordinary skill in the art at the time the invention was made to change the shape of the mandrel, since it has been held that a change in shape is generally recognized as being within the level of ordinary skill in the art. MPEP 2144.04 IV (B).

With regards to claim 90, the recitations in claim 90 are directed to the process of removing the end cap from an already sealed battery as recited in the claims from which claim 90 depends and therefore claim 90 does not further limit the structure of the

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claims from which it depends. Therefore Kitoh as modified by Kitano and Coibion reads on claim 90 as recited.

Allowable Subject Matter

Claims 72 and 76 are objected to as being dependent upon a rejected base claim, but would be allowable if rewritten in independent form including all of the limitations of the base claim and any intervening claims. The prior art does not teach or fairly suggest that the mandrel comprises titanium and a channel to inject electrolyte and there is no motivation for a skilled artisan to modify the prior art of record to make the instantly claimed invention of claims 72 or 76.

Conclusion

Applicant's amendment necessitated the new ground(s) of rejection presented in this Office action. Accordingly, **THIS ACTION IS MADE FINAL**. See MPEP § 706.07(a). Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire THREE MONTHS from the mailing date of this action. In the event a first reply is filed within TWO MONTHS of the mailing date of this final action and the advisory action is not mailed until after the end of the THREE-MONTH shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of

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the advisory action. In no event, however, will the statutory period for reply expire later than SIX MONTHS from the date of this final action.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to ROBERT HODGE whose telephone number is (571)272-2097. The examiner can normally be reached on 8:00am - 4:30pm.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Ula Ruddock can be reached on (571) 272-1481. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

/Robert Hodge/
Primary Examiner, Art Unit 1729